

WHAT IS CLAIMED IS:

1. Water mister apparatus for supplying humidified air to a compressor forming part of a gas turbine, comprising:

an air inlet duct for supplying air to the compressor;

a plurality of manifolds arranged in the air inlet duct for communication with a supply of water and extending between opposite walls of the duct, in spaced arrays thereof in a direction of air flow through the duct to the compressor, manifolds of each array thereof lying in substantial alignment with manifolds of other arrays thereof in the direction of air flow through the duct to the compressor;

a plurality of nozzles in communication with each of the manifolds;

a first set of said plurality of nozzles extending in a downstream direction from a downstream array of manifolds;

a second set of said plurality of nozzles extending in a downstream direction from manifolds of said plurality thereof arrayed intermediate an array of upstream manifolds of said plurality thereof and said downstream array of manifolds;

a third set of said plurality of nozzles extending in a downstream direction from said upstream array of manifolds;

said first, second and third sets of nozzles of said downstream, intermediate and upstream arrays of manifolds, respectively, terminating substantially in a common plane extending across said duct and generally normal to the direction of air flow through the duct.

2. Apparatus according to Claim 1 wherein at least one set of said second and third sets of nozzles extends from a corresponding one of said intermediate and upstream manifolds, bypassing said downstream manifolds in a downstream direction.

3. Apparatus according to Claim 1 wherein said second set of nozzles extends from said intermediate array of manifolds along one side of and bypasses downstream manifolds of said downstream array thereof, said third set of nozzles extending from said upstream manifolds along an opposite side of said downstream manifolds.

4. Apparatus according to Claim 1 wherein the nozzles of the first, second and third sets thereof are arranged in groups of three nozzles each with the three nozzles of each group being carried by aligned manifolds of the respective arrays thereof, the groups of nozzles being spaced across the duct from one another.

5. Apparatus according to Claim 4 wherein said second set of nozzles extends from said intermediate array of manifolds along one side of and bypasses downstream manifolds of said downstream array thereof, and said third set of nozzles extends from said upstream

manifolds along an opposite side of said manifolds of said downstream array thereof.

6. Water mister apparatus for supplying humidified air to a compressor forming part of a gas turbine, comprising:

an air inlet duct for supplying air to the compressor;

a plurality of manifolds arranged in the air inlet duct for communication with a mister supply and extending between opposite walls of the duct in downstream, intermediate and upstream arrays thereof spaced from one another in a direction of air flow through the duct to the compressor, each array having a plurality of said manifolds spaced one from the other and lying generally in a common plane generally perpendicular to the direction of air flow, manifolds of each array thereof lying in substantial alignment with the manifolds of other arrays thereof in the direction of air flow;

a plurality of nozzles in communication with each of the manifolds;

a first set of said plurality of nozzles extending in a downstream direction from said downstream array of manifolds;

a second set of said plurality of nozzles extending in a downstream direction from said intermediate array of manifolds;

a third set of said plurality of nozzles extending in a downstream direction from said upstream array of manifolds;

said first, second and third sets of nozzles of said downstream, intermediate and upstream arrays of manifolds, respectively, terminating substantially in a common plane extending across said duct and generally normal to the direction of air flow through the duct.

7. Apparatus according to Claim 6 wherein at least one set of said second and third sets of nozzles extends from a corresponding one of said intermediate and upstream manifolds aligned with said downstream manifolds, respectively, and bypassing said downstream manifolds in a downstream direction.

8. Apparatus according to Claim 6 wherein said second set of nozzles extends from said intermediate manifolds along one side of and bypasses downstream manifolds, said third set of nozzles extending from said upstream manifolds along an opposite side of said downstream manifolds.

9. Apparatus according to Claim 6 wherein the nozzles of the first, second and third sets thereof are arranged in groups of three nozzles each with the three nozzles of each group being carried by aligned manifolds of the respective arrays thereof, the groups of nozzles being spaced across the duct from one another.

10. Apparatus according to Claim 9 wherein said second set of nozzles extends from said intermediate

array of manifolds along one side of and bypasses downstream manifolds of said downstream array thereof, and said third set of nozzles extends from said upstream manifolds along an opposite side of said manifolds of said downstream array thereof.